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CLAIMS

✓ 1. (Amended) A process for producing a
fluoroalkylcarboxylic acid of the formula RfCOOH wherein
Rf is a C₁₋₁₆ fluoroalkyl group, which comprises oxidizing
5 a fluoroalkyl alcohol of the formula RfCH₂OH wherein Rf is
as defined above using nitric acid and feeding oxygen into
the reaction system during the oxidation reaction.

Sub B 2. The process according to claim 1 wherein
the oxidation is carried out in the presence of a metal
10 catalyst.

3. The process according to claim 2 wherein
the metal catalyst is at least one metal selected from the
group consisting of iron, nickel, copper and vanadium, or
at least one oxide or salt of these metals.

15 4. The process according to any one of claims
1-3 wherein a fluoroalkylcarboxylic acid of the formula
RfCOOH wherein Rf is as defined above is present in the
reaction system at the beginning of the reaction.

5. (Cancelled)

20 6. (Amended) The process according to any one
of claims 1-4 wherein oxygen is fed into the reaction
system to reduce the required amount of nitric acid to a
stoichiometric amount or less relative to the fluoroalkyl
alcohol of the formula RfCH₂OH wherein Rf is as defined
25 above.

acid (114.55 g, 1.00 mole) and $\text{FeCl}_2 \cdot n\text{H}_2\text{O}$ (0.0066 g) were placed into an autoclave equipped with a 1000-ml glass pressure vessel, a fluoroplastic upper cover, stirring blades, a thermometer protection tube, a fluoroplastic insert tube, a pressure gauge, a safety valve and a supply line from an oxygen bomb. The mixture was stirred with heating, upon which reaction pressure began to increase. 3.1 hours after the start of heating, the reaction temperature rose to 125°C and the reaction pressure increased to 0.6 MPa (gauge pressure; the same hereinafter). From that time, oxygen was fed into the gas phase at various times in an amount of 0.35 g (11.00 mmoles) per time, whereby the reaction pressure was controlled to 0.6 MPa. 6.5 hours after the start of heating, complete consumption of the starting fluoroalkyl alcohol was confirmed by gas chromatography to confirm the completion of the reaction [$\text{H}(\text{CF}_2)_6\text{CH}_2\text{OH}$ conversion: 100.0 g.c.% (gas chromatography %; the same hereinafter); $\text{H}(\text{CF}_2)_6\text{COOH}$ selectivity: 100.0 g.c.%]. In total, 46.72 g (1.46 moles) of oxygen was fed into the gas phase by the end of the reaction. After completion of the reaction, oxygen was continuously supplied so as to convert residual nitrogen oxides into nitric acid. Then the residual pressure was released. Because of the reaction mixture being provided in the form of two layers of liquids,